Botany Program Strategic Framework for Montana Natural Heritage Program
July 2020 through June 2025

MONTANA Natural Heritage Program

Purpose

The mission of the Botany Program is to collect and maintain reliable and comprehensive information on the diversity, status, biology, and conservation needs of Montana's flora, focusing on species of conservation concern. This information is to be made available to government agencies (federal, state, tribal, and local), academia, non-profits, private industry, and the general public to support informed stewardship of Montana's vascular plants, mosses, liverworts, hornworts, fungi, lichens, algae, diatoms, and cyanobacteria.

What We Value

- Maintaining comprehensive, current, accurate, and scientifically credible information on Montana's flora.
- Working with our partners and other botanical experts to acquire comprehensive information to meet program needs.
- Being responsive to the information needs of our partners.
- Providing neutral, trusted, timely, and equitable service to all information users.
- Transparency to our data users in acquiring information, setting work priorities, and providing information products.

Our Roles

- Manage comprehensive, current, and accurate information on Montana's flora, including species checklists, species observations and their related data, scientific literature, reports, and expertise from other botanical experts.
- Network to acquire botanical species observations and related information and to develop or maintain current taxonomic checklists from government agencies (federal, state, tribal, and local), non-governmental organizations, non-profits, botanical professionals and amateurs, and private industry.
- Develop collaborative botanical projects that fund data management, conservation ranking, status reviews, species profile write-ups, inventories, studies of distribution and status, trainings and other educational needs, citizen botany efforts, predicted distribution models, and other informational products.
- Provide consultation and respond to requests for information on botanical topics from state and federal agencies, tribes, private industry, the public, and internal staff.

Botany Strategic Result 1

What we will do:

Acquire and manage information on Montana's vascular plant, moss, liverwort, hornwort, fungi, lichen, algae, diatom, and cyanobacteria flora living within aquatic and terrestrial biological communities.

How we will do it:

- Work with professional and amateur botanists, resource professionals who work on botanical projects, and other knowledgeable people to submit credible observations for botanical species.
- Conduct quality control and assurance measures on acquired observation data and its spatial representation and ensure it can be publicly shared.
- Conduct internal audits and quality control measures on existing older data to correct problems resulting from taxonomic changes, revised data standards, or other program changes.
- Strive to stay current with botanical literature and to engage with the network of botanical experts.
- Develop work plan(s) to address complex revisions to current taxonomy, nomenclature, range mapping, field guide accounts/profiles, and species identifications as they relate to our databases, field guides, and other MTNHP products.
- Manage the literature reference database by adding, updating, or modifying botanical reference materials. Strive to fully link observation data, literature, files, and other informational sources by implementing protocols for file naming, Biotic Source Codes, attributing, and hyperlinking, as appropriate.
- Strive for comprehensive and accurate photographic representation of Montana's flora on the Montana Field Guide by acquiring and attributing images.
- Search for grant opportunities that could fund portions of this work and submit proposals as appropriate.
- Work with MTNHP Program Lead to obtain a permanent botany assistant for data-entry, mapping, field guide account writing, database management, and other botanical tasks.

Why we do it:

Our data users must have current, accurate, and comprehensive data for making informed decision.

Botany Strategic Result 2

What we will do:

Facilitate efforts that synthesize, centralize, and/or develop statewide botanical projects.

How we will do it:

- Network with people working for government agencies (federal, state, tribal, and local), academia, non-profits, and private industry to collaborate on proposals and projects and acquire data and information pertinent to the botanical species in Montana.
- Network and consult with botanical experts to acquire information and determine taxonomy, nomenclature, species checklists, origin, species' range maps, conservation status ranks, and other elements as they pertain to Montana.
- Develop new partnerships and maintain working relationships with professional and amateur botanists, academics, and resource professionals engaged with botanical projects in Montana.
- Engage with the network of NatureServe botanists, ecologists, and other specialists to share Montana's botanical information with regional and national databases and websites.
- Collaborate with the Montana Native Plant Society to present programs, co-develop a Citizen Botany program, host a Montana Plant Conservation Conference, and contribute, as appropriate, to the Society's mission and functions.
- Lead a partnership who is in pursuit of developing a Montana Plant Conservation Strategy.
- Write and submit proposals to fund work that serves the Botany Program's mission in Montana (e.g., Endangered Species Act-Section 6 grants from the USFWS; Noxious Weed Trust Fund grants from the Montana Department of Agriculture; Botany agreements with the USFS and BLM).
- Provide botanical consultation and, in collaboration with other MTNHP staff, respond to requests for information from people who work for government, academia, non-profits, private industry, and the general public. Strive to respond to requests in a timely fashion.

Why we do it:

Collaborating with partners and information users on information development and centralization ensures that we are meeting information needs that are most relevant to them.

Botany Strategic Result 3

What we will do:

Create species-level products through data compilation, synthesis, and analysis that will aid in efforts of stewardship and conservation.

How we will do it:

- Assign conservation status ranks and make Species of Concern and Potential Species of Concern determinations to species, subspecies, varieties, and hybrids using internal data and tools, software, NatureServe tools and protocols, literature, expertise from other botanists, and other information.
- Use NatureServe methodology, botanical expertise, and species-level data to create, modify, or remove SOs for vascular plant, moss, and lichen SOC and PSOC.
- Create or revise full profiles on botanical species, subspecies, varieties, and/or hybrids on the Montana Field Guide.
- Search for grant opportunities and submit proposals, as appropriate, to fund work that conducts or revises statewide rank reviews, range mapping, predicted habitat suitability models, and species occurrence mapping, and updates information presented on the Montana Field Guide.
- Participate in botanical committees, work groups, or panels to address conservation and threat ranking for species, develop monitoring protocols for threatened and endangered plants, address species-level invasiveness, assign coefficients of conservation values, develop a climate change vulnerability index for species, and address other informational needs.
- Collaborate with a network of amateur and professional botanists, academia, and resource professionals to develop botanical products and tools. Coordinate with and assist the Information Services staff in the development and creation of these products.
- Create and share predicted habitat suitability models and associated write ups for botanical species in Montana in collaboration with other MTNHP staff and botanical experts.
- Create and share range polygons for botanical species in Montana in collaboration with other MTNHP staff and botanical experts.

Why we do it:

Species-level products are used by MTNHP partners to determine likely distribution and status, prioritize survey and conservation efforts, and assess management actions for individual species or suites of species. Products that follow NatureServe standards can then be aggregated at regional, national, and international scales.

Botany Strategic Result 4

What we will do:

Conduct field-based botanical studies and trainings aimed at surveying for species, inventorying geographical areas, monitoring, teaching, and protocol training.

How we will do it:

- Network with people working for government agencies (federal, state, tribal, and local), academia, non-profits, and private industry to identify field-based survey, training, or teaching projects aimed at particular species, taxa, or protocols, and the funding to carry-out these projects.
- Collaborate with the Montana Native Plant Society to co-develop a Citizen Botany Program aimed at training citizens to re-visit known Montana Species of Concern and Potential Species of Concern locations to collect current data and map plants.
- Conduct surveys for particular species or taxa groups, particularly for species designated as Montana Species of Concern and Potential Species of Concern or with federal designations of threatened, endangered, proposed, candidate, sensitive, or species of conservation concern.
- Conduct botanical inventories for specific geographical areas.
- Conduct data collection or monitoring using standardized protocols such as with the *Silene spaldingii* Monitoring Protocol, National Wetland Inventory Assessment, Ground Layer Indicator for Rangelands, and Forest Inventory Analysis-Phase 3 Lichen Protocol.
- Coordinate with the MTNHP Ecology and Zoology Programs to provide plant identification assistance and to train crews in implementing standardized protocols such as with the National Wetland Inventory Assessment, Ground Layer Indicator for Rangelands, and Forest Inventory Analysis-Phase 3 Lichen Protocol.
- Teach field-based classes in plant identification to resource professionals working for federal and state agencies, tribes, private industry, and non-profit organizations.
- Search for grant opportunities and submit proposals that can fund field-based surveys, monitoring, and teaching projects. Potential annual funding sources to pursue include: Endangered Species Act-Section 6 grants from the USFWS; Noxious Weed Trust Fund from the Montana Department of Agriculture; Botany agreements with the USFS and BLM.

Why we will do it:

Field surveys help determine the status and distribution of species and this allows information users to make more informed decisions.